

REMARKS

Applicants respectfully request reconsideration and allowance of all pending claims.

I. Status of Pending Claims

In this Amendment D, the only change made to the claims is the designation for claim 103, which has been changed from "Previously Presented" to "Withdrawn", consistent with the Office's request. Accordingly, claims 90-122 remain pending. Claims 90-95, 98-102, 106, 107, 113, 114, 116-119 and 122 are currently under consideration, while claims 96, 97, 103-105, 108-112, 115, 120 and 122 have been withdrawn from consideration at this time.

II. Claim Rejections under §103

Applicants respectfully request reconsideration of the rejection of claims 90-95, 98-102, 106, 107, 113, 114 and 116-119, all of which were previously found allowable, under 35 U.S.C. §103 as being upatentable over Weinberg et al. (U.S. Pat. 6,030,917) and Johnson et al. (J. Am. Chem. Soc., **1995**, 117(23), pp. 6414-6415). Additionally, Applicants respectfully request reconsideration of the rejection of claim 122, also previously found allowable, under 35 U.S.C. §103 as being unpatentable over Weinberg et al. (U.S. Pat. 6,030,917) and Johnson et al. (J. Am. Chem. Soc., **1995**, 117(23), pp. 6414-6415), in view of Murata et al. (U.S. Pat. 5,892,075).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. And third, the prior art reference must disclose or suggest all the claim limitations. MPEP §2142. With respect

to the first of the three noted criteria, MPEP §2142 further states that, to support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention, or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to be obvious.

Applicants respectfully submit the Office has failed to establish a *prima facie* case of obviousness because, at a minimum, (i) the cited references fail to disclose or suggest all of the claim limitations, and/or (ii) the Office has failed to provide a convincing line of reasoning to support that there is some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the teachings of Weinberg et al. and Johnson et al., alone or further in view of Murata et al., in order to obtain the process of any of the presently rejected claims.

Claim 90, from which all other pending claims depend, is directed to a process for preparing and screening an array of metal-ligand compositions. The process comprises:

preparing an array of metal-ligand compositions in a plurality of discrete reaction vessels contained by or within an integrated structure, wherein the plurality of reaction vessels of the array contain different metal-ligand compositions and said preparing comprises delivering a metal-binding ligand and a dissolved, soluble metal precursor to each of the plurality of reaction vessels of the array which combine to form the metal-ligand composition, wherein said soluble metal precursor comprises a solublizing ligand and formation of one or more of the metal-ligand compositions is accompanied by the displacement of said solublizing ligand;

delivering a polymerization monomer to the metal-ligand compositions in the plurality of reaction vessels of the integrated

structure to prepare an array of polymerization mixtures therein, wherein one or more of said polymerization mixtures contains a displaced solublizing ligand resulting from the preparation of said metal-ligand compositions;

subjecting the array of polymerization mixtures in the integrated structure to conditions conducive to the formation of a polymerization reaction product; and

screening said array for a polymerization reaction product, wherein the displaced solublizing ligand reduces the catalytic activity of the metal-ligand composition in the polymerization mixture in the polymerization reaction by less than about 80%.

Accordingly, the process of claim 90 is directed to, in part, the preparation of an array of metal-ligand compositions using a soluble metal precursor that is dissolved, wherein as a result of that preparation a solublizing ligand is displaced therefrom. Notably, the displaced solublizing ligand is present in the subsequently formed polymerization mixture, and reduces the catalytic activity of the metal-ligand composition in the polymerization mixture in the polymerization screening reaction by less than 80%.

As noted in the present application, the solution-based process of the present invention is advantageous for a number of reasons, such as for example that it enables a screening polymerization reaction to be carried out without the need for a purification step prior thereto (e.g., filtration or recrystallization). Accordingly, by-products, such as a displaced solublizing ligand, resulting from the preparation of the metal-ligand compositions, may be present in the polymerization mixtures that are prepared. (See, e.g., p. 3, lines 6-26; p. 5, line 32 to p. 6, line 9; p. 41, lines 23-27; p. 45, lines 30-35; and, Examples 1-35). The present process is therefore advantageous in that, when present in the polymerization mixture as required by claim 90, the displaced solublizing ligand is sufficiently innocuous such that it reduces the catalytic activity of the metal-ligand composition in the polymerization reaction of interest by less than 80%.

Applicants acknowledge that both Weinberg et al. and Johnson et al. disclose processes wherein a ligand is displaced from the metal precursor employed in preparing the product catalyst, or metal-ligand composition. Notably, however, the resulting product (i.e., catalyst or metal-ligand composition) is purified prior to carrying out a subsequent reaction, such as a polymerization reaction. (See, e.g., Weinberg et al. at column 42, scheme 9 and related text, and Johnson et al. at reaction scheme 1, which indicates that catalysts are reacted after, among other things, isolation and purification.)

Accordingly, contrary to the Office's assertion that the cited prior art discloses subject matter identical to that being claimed here, Applicants submit both references fail to disclose or suggest a process wherein a displaced ligand is present in a subsequently formed reaction mixture (e.g., polymerization reaction mixture). As such, both references also fail to disclose or suggest such a process wherein a displaced ligand, present in a polymerization reaction mixture, reduces the catalytic activity in the polymerization screening reaction by less than 80%. It is therefore respectfully submitted that the Office has failed to establish a *prima facie* case of obviousness, because the combination of Weinberg et al. with Johnson et al. fail to disclose or suggest all of the limitations of claim 90.

Applicants additionally submit that the Office has failed to establish a *prima facie* case of obviousness because the Office has failed to provide a convincing line of reasoning to support that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the teachings of Weinberg et al. and/or Johnson et al., in order to obtain the process of claim 90. Applicants respectfully submit there is simply no motivation for one of ordinary skill in the art to modify the processes disclosed in Weinberg et al. or Johnson et al., in order to obtain a process for preparing and screening an array of metal-ligand compositions in a polymerization reaction, wherein a polymerization reaction mixture formed therein contains a displaced solublizing ligand, and further wherein that displaced solublizing ligand reduces the catalytic activity of the metal-ligand composition in the polymerization reaction of interest by less than 80%.

There is no such motivation because Weinberg et al. and Johnson et al. both disclose processes wherein the resulting metal-ligand composition, or catalyst, is purified prior to a subsequent reaction. Applicants therefore submit it is only through impermissible hindsight, in view of the present application, that one of ordinary skill in the art would be motivated to modify the processes of Weinberg et al. and Johnson et al. to obtain a process wherein a polymerization reaction mixture is formed in the presence of a displaced solublizing ligand, and further wherein the displaced solublizing ligand reduces the catalytic activity in the polymerization screening reaction by less than 80%.

With respect to claim 122, Applicants submit the addition of Murata et al. does nothing to address the failures of the Weinberg et al. and Johnson et al. disclosures. Specifically, Murata et al. fail to disclose or suggest a process for preparing an array of metal-ligand compositions using a soluble metal precursor that is dissolved, wherein as a result of that preparation a solublizing ligand is displaced therefrom, and further wherein (i) the displaced solublizing ligand is present in a subsequently formed polymerization mixture, and (ii) the displaced solublizing ligand reduces the catalytic activity of the metal-ligand composition in the polymerization mixture, in a polymerization screening reaction, by less than 80%. Rather, Murata et al., similar to Johnson et al., is focused on the preparation of metal-ligand compounds which, after purification, may be used in a subsequent polymerization reaction. (See, e.g., the Examples in Murata et al., wherein every compound prepared therein is isolated and/or purified in some manner, prior to being used in a subsequent reaction.)

In view of the foregoing, Applicants respectfully submit claim 90, as well as claims 91-95, 98-102, 106, 107, 113, 114, 116-119 and 122 depending therefrom, are patentable over the cited combination of references. Reconsideration of the rejection of these claims is therefore respectfully requested.

CONCLUSION

In view of the foregoing, allowance of now pending claims 90-122 is respectfully requested.

The Commissioner is hereby authorized to charge any underpayment or credit any overpayment to Deposit Account No. 19-1345.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Derick E. Allen". The signature is fluid and cursive, with the first name "Derick" being more prominent.

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